CHAPTER 3 – ALTERNATIVES

3.1 ALTERNATIVE CORRIDOR EVALUATION/SELECTION PROCESS

In 2002-2003, a corridor location study process was conducted for the Happy Valley Road extension of SR 303L from I-17. The purpose of the study was to evaluate potential corridor locations for the northeast portion of SR 303L. The corridor location study process analyzed a large area (see Figure 3-1) to determine viable corridor locations for future alignments of SR 303L. The study process, evaluation, and decisions are documented in the Road System Study (URS 2003a). The evaluation of the potential corridors incorporated analyses based on a list of criteria grouped into three broad categories:

- Physical criteria (construction cost, right-of-way requirements, canal crossings, flood-plain crossings, utility impacts, system interchange complexity)
- Traffic criteria (system-wide performance, point-to-point travel time, traffic volumes and capacities, traffic safety, service to weekend traffic, impact on state highway system)
- Environmental criteria (compatibility with planned land use, hazardous materials [Hazardous material], visual impacts, impacts to existing land uses, biological impacts, air quality, water quality, cultural resources, noise, socioeconomic impacts, and environmental justice)

Additionally, public and agency input was included in the evaluation process. A public meeting was held on November 19, 2003, and comments were collected on potential corridor locations. Agencies also provided written comments on potential locations for a roadway corridor. Three main corridors for SR 303L were evaluated — Lone Mountain Road Corridor, Carefree Highway Corridor, and the New River Road Corridor. Within the three, eight potential corridor combinations were evaluated. Figure 3-2 illustrates the three main corridors studied. With public and agency support, the Lone Mountain Road Corridor was selected for further study as the recommended corridor for SR 303L. In addition, it was determined that the New River Road Corridor would be needed in the more distant future and was also included for further study so that SR 74 traffic could be routed to the planned SR 303L, thus relieving Carefree Highway of its function as a state highway.

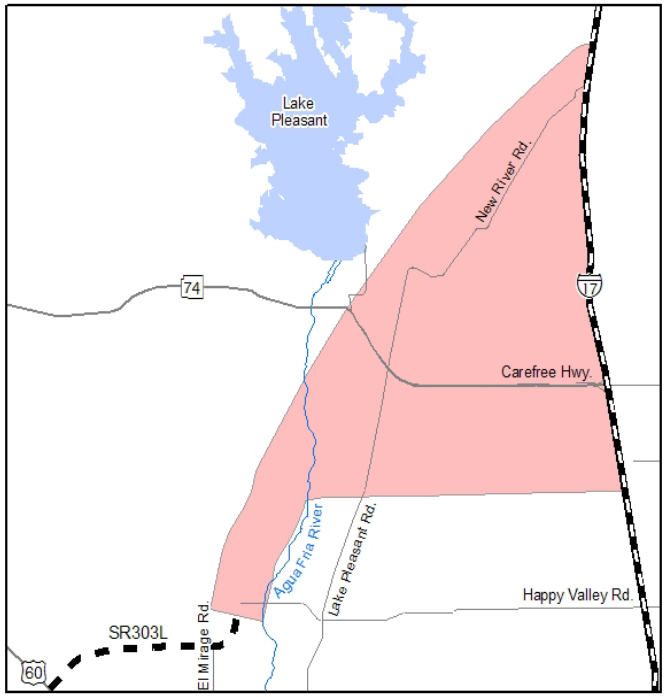


Figure 3-1: Corridor Location Study

The corridor location study process analyzed a large area to determine viable locations for a future roadway. The general corridor study location is shown as the shaded area.

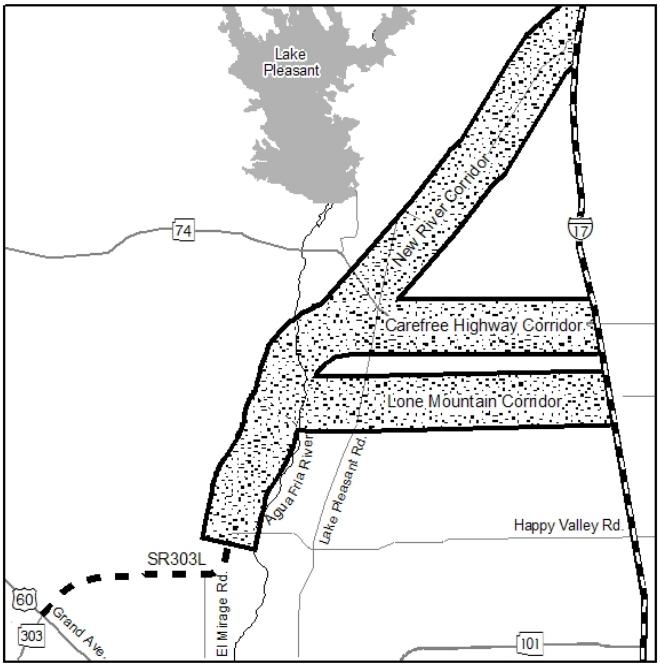


Figure 3-2: Three Main Corridors Evaluated

Three main corridors were analyzed. Within the three, eight potential corridor combinations were evaluated. With public and agency support, the Lone Mountain Road Corridor was selected as the preferred corridor for SR 303L.

3.2 ALIGNMENT ALTERNATIVES EVALUATION/SELECTION PROCESS

The Lone Mountain Corridor was identified as the preferred corridor for the proposed project, and the project also includes an extension from SR 303L to SR 74. To aid in the alignment study phase, the proposed project was divided into four corridor segments. Segment 1 of SR 303L extends from the Happy Valley Road section line northeastward to near the Lone Mountain section line, then eastward across the Agua Fria River. Segment 2 of SR 303L extends eastward from that point, crosses the New River, and extends to future alignment of 43rd Avenue. Segment 4 provides an extension northward from Segment 2 to SR 74 (Carefree Highway). These three segments constitute the proposed project in this document (see Figure 3-3).

The recommended Segment 3 alignment extends SR 303L from the future 43rd Avenue to I-17, and includes planned system and service interchanges. This segment is addressed in a separate environmental document because of its connection to a designated federal highway.

In January 2004, an alignment study report was produced to recommend the alignments that should be advanced for additional study (URS 2004i). A summary of that report follows.

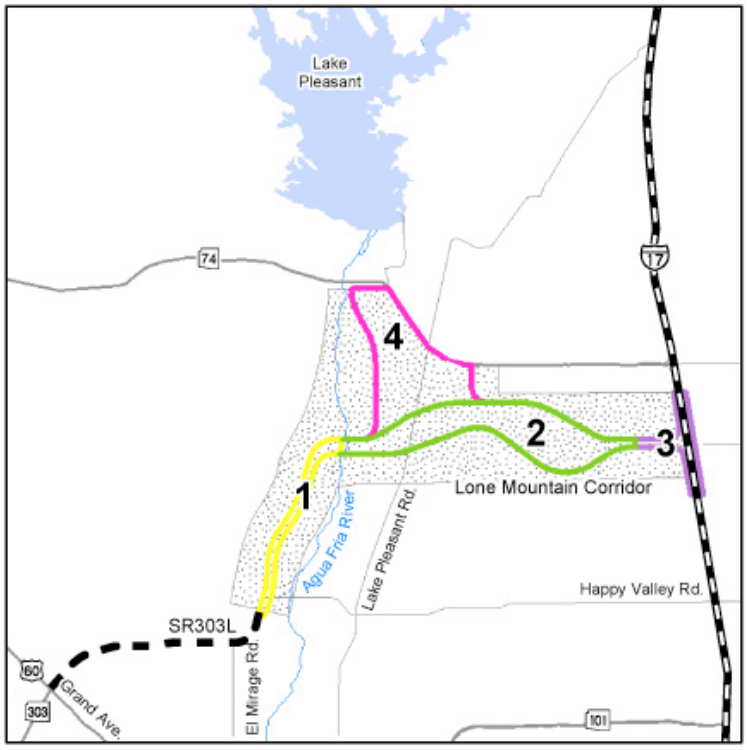


Figure 3-3: Corridor Segments

The recommended corridors were divided into four segments for alignment studies. This DEA focuses on Segments 1, 2, and 4

Segments 1 and 2 of the proposed project corridor are approximately 12.5 miles long, originating between the Happy Valley Road section line near the 115th Avenue section line and ending at the 43rd Avenue section line. Determining alignment alternatives within this section of the corridor required consideration of a variety of challenges imposed by terrain, rivers, canals, property ownership, and development activities. For Segment 4, there were a wide variety of possible alignments to connect SR 303L to SR 74, and some of the potential connections would have involved realignment or reconfiguration of SR 74. Accordingly, the northern end of Segment 4 was not defined at the beginning of the alignment studies other than to state that it would terminate wherever it connects to SR 74.

Engineering and environmental factors were analyzed as part of the evaluation of alternative alignments (URS 2004c). Each alternative alignment met basic roadway design criteria established for the project, but certain engineering factors were used to rank the alternatives within each segment. These factors included:

- Terrain
- Perpendicular river crossings
- Interchange locations
- Minimization of canal crossings
- Minimization of utility crossings
- Interchange spacing

Although the environmental factors listed below were used to analyze the alignment alternatives, no critical environmental issues (fatal flaws) were identified along any of the alignment alternatives. However, it was determined to be desirable to minimize the amount of private property and BLM property acquired for the alignments. The majority of the land in the corridors is Arizona State Trust land that is, in accordance with the state constitution, committed to be developed to its highest and best use to maximize financial return to the Trust and its beneficiaries.

- Existing and planned land use
- Recreational resources
- Land ownership and jurisdiction
- Hazardous materials
- Visual resources
- Biological resources
- Cultural resources
- Noise impacts
- Air quality
- Water quality and floodplains
- Socioeconomic resources
- Environmental justice

Public and agency input was included in the evaluation process. A public meeting held on November 19, 2003, was attended by approximately 100 people, and comments were collected (see Chapter 5). Also, monthly stakeholder meetings were held throughout the alignment studies to involve agencies in the process and to obtain their input.

Each of the SR 303L segments is discussed individually below. Maps are provided to highlight the engineering and environmental factors that led to the selection of a preferred alignment alternative within each segment. The three preferred alignments have been carried forward to be evaluated as the proposed project in this DEA.

Segment 1 (Alignment Alternatives A, B, C, D)

Four alternative alignments were developed for Segment 1 (see Figure 3-4). These are discussed below as Alignment Alternatives 1A through 1D and the factors used to rank the alternatives are summarized in Table 3-1.

Table 3-1
Segment 1 Summary Table

Alternative	Advantages and Disadvantages
1B – Preferred Alignment Alternative	• **Minimizes taking of private property** • **Minimizes encroachment onto BLM property** • **Avoids rugged terrain to the west**
Alignment Alternative **1A**	• Potential encroachment on the residential area east of 115th Avenue • Potential impact on a Church of Jesus Christ of Latter Day Saints (LDS) property • Encroachment on BLM property
Alignment Alternative **1C**	• Encroaches on a wash • Bisects BLM property • Encroaches more on the LDS property
Alignment Alternative **1D**	• Encroaches into more rugged terrain • Greatly increases the earthwork required for the project

Alignment Alternative 1A was essentially the alignment recommended in the Feasibility/ Location Study, SR 303L, Happy Valley Road to Lake Pleasant Parkway prepared for MCDOT in 2001. Alignment 1A had several disadvantages. This alignment passed near private properties located east of 115th Avenue. The alignment would encroach on the residential area east of 115th Avenue and on a parcel owned by BLM.

Alignment Alternative 1B was developed to alleviate these issues. The location of Alternative 1B is similar to 1A, but incorporated slightly modified curves to reduce potential impacts on the residential area. In addition, the alignment was relocated to the west to reduce the encroachment on the BLM parcel, and the curve near the Lone Mountain Road section line was moved northward to reduce impacts to private property. The resulting crossing of the Agua Fria River was slightly north of the location proposed in Alternative 1A.

Two other alignment alternatives were developed to place SR 303L as close to the Agua Fria River and Beardsley Canal as possible (Alignment Alternative 1C) and as close to the Arizona Public Service Company (APS) power lines as possible (Alignment Alternative 1D). These alignment alternatives were developed to maximize the amount of contiguous developable land along the corridor. Further analyses indicated that 1C would encroach on a wash, bisect the BLM properties, and encroach more on private property. Alignment Alternative 1D would traverse more rugged terrain; therefore, the earthwork (and accompanying costs) required for 1D would be greater than the other alternatives.

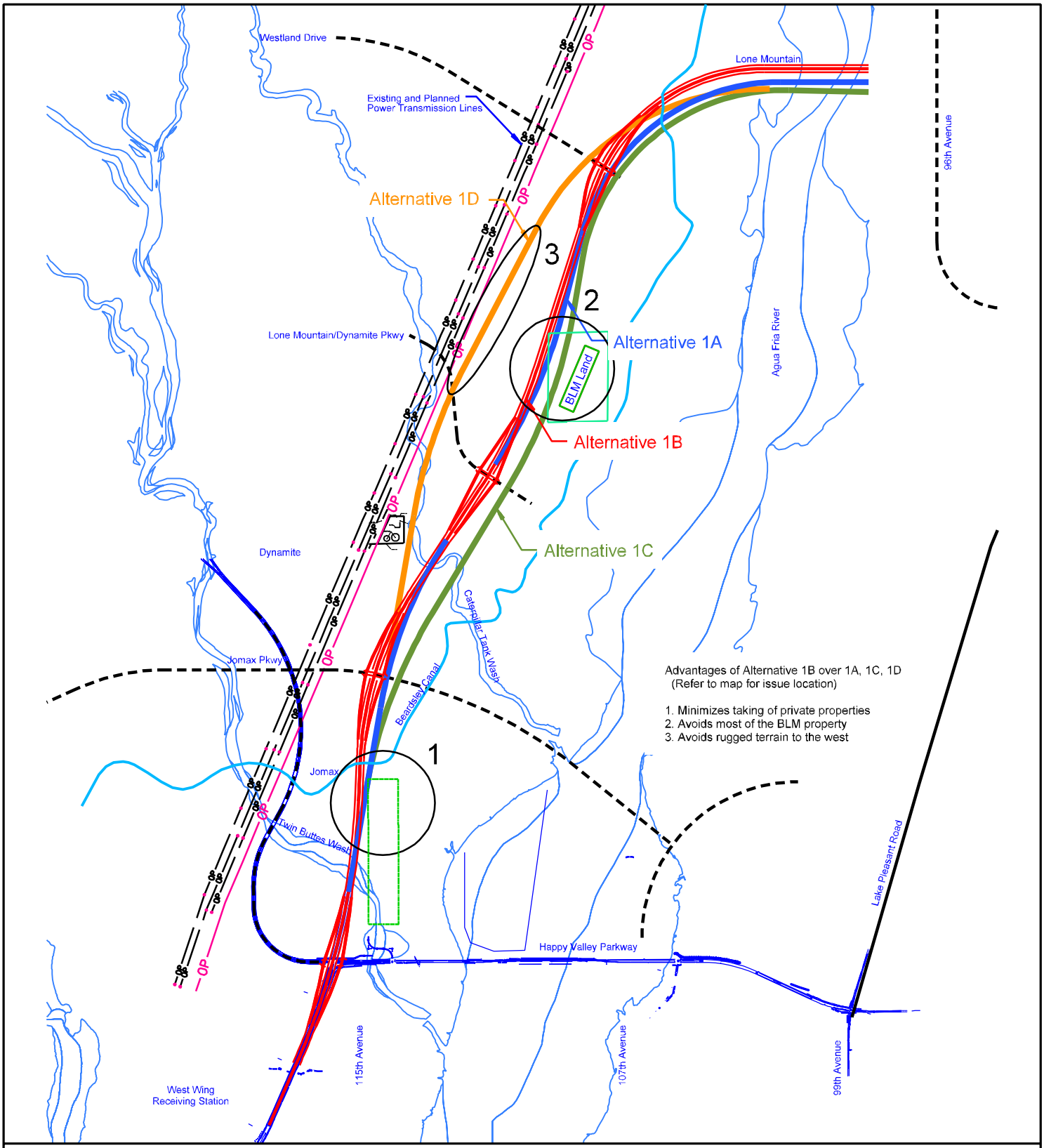
Alignment Alternative 1B was selected to advance to preliminary design and environmental analysis because it traversed favorable terrain, had the least impact on private and BLM properties, and provided a favorable crossing location of the Agua Fria River. At the request of the City of Peoria, three interchanges with future roads that would intersect SR 303L between Happy Valley Parkway and the curve to cross the Agua Fria River were added (Jomax Parkway, Lone Mountain/Dynamite Parkway, and Westland Drive).

Segment 2 (Alignment Alternatives A, B, C)

Alternative alignments for Segment 2 were designed to avoid the New River Dam impoundment area and the major topographic features in the area (see Figure 3-5). Alignment Alternative 2A was the southernmost alignment and was designed to pass south of less developable terrain located east of the New River; however, this alternative passed through a large BLM parcel. The BLM requested elimination of this alternative because the parcel was designated for recreation use only (BLM 1988); therefore, this alternative was eliminated from further consideration.

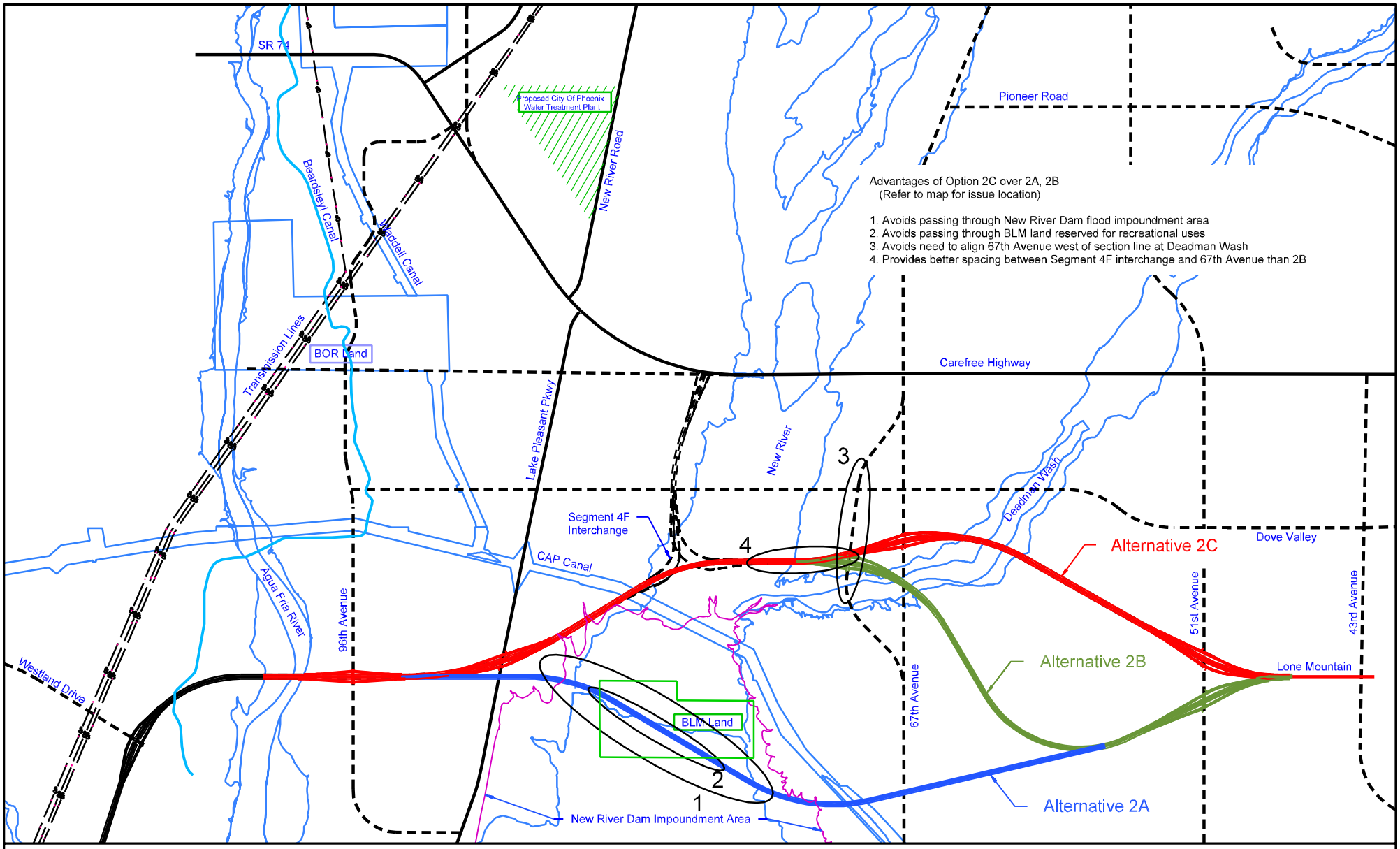
Alignment Alternatives 2B and 2C crossed the CAP siphon in the New River floodplain. BOR (owner of the CAP) and the CAWCD (operator of the CAP) indicated that the siphon could be crossed by the SR 303L mainline, but they did not want separate ramp structures crossing the siphon. Alignment Alternatives 2B and 2C met all freeway design clearance requirements imposed by BOR and CAWCD.

After crossing the CAP siphon, Alignment Alternatives 2B and 2C curve east to cross the New River. The crossing location would occur in an area where the low flow channel was better defined; therefore, by crossing the CAP Canal in this location, impacts to the New River Dam impoundment area were avoided.



Segment 1 Alignment Alternatives
Estrella Freeway (SR 303L),
Happy Valley Road to 43rd Avenue
Project No. S 303-A-200
Tracs No. 303L MA 003 H5946 01L

Figure 3-4



LEGEND

- Alternative 2A
- Alternative 2B
- Alternative 2C
- Planned Arterials

N

0 ½ 1

SCALE IN MILES

Segment 2 Alignment Alternatives
Estrella Freeway (SR 303L),
Happy Valley Road to 43rd Avenue
Project No. S 303-A-200
Tracs No. 303L MA 003 H5946 01L

Figure 3-5

ADOT

East of the New River, Alignment Alternative 2B turned south before curving back north to the Lone Mountain Road section line. This alternative crossed Deadman Wash on a skew. To prevent having the future 67th Avenue interchange within the Deadman Wash floodplain, 67th Avenue would have to be realigned to the west. This realignment would make the 67th Avenue interchange too close to the system interchange recommended for Segment 4 (see discussion of Segment 4 below); therefore, Alignment Alternative 2B was eliminated from further consideration.

Alignment Alternative 2C remains north of Deadman Wash until the wash curves northward; therefore, a more perpendicular crossing of Deadman Wash would result. The alignment remains north of less developable terrain and then curves south to the Lone Mountain section line. As a result, 67th Avenue would not require realignment. This alignment would place SR 303L approximately one-quarter mile south of the Dove Valley Road section line near 67th Avenue. As a result, the future Dove Valley Road would be realigned approximately one-quarter mile north of the section line west of 51st Avenue to Lake Pleasant Parkway to provide better separation between the freeway interchanges and the street intersections on Dove Valley Road. The planned APS power line on the north side of the future Dove Valley Road would also be placed one-quarter mile north. Representatives from the Cities of Phoenix and Peoria and APS indicated that the realignment of the future road and power line would be acceptable.

Alignment Alternative 2C was selected as the preferred alignment alternative and advanced to preliminary design and environmental analysis because it (1) avoided realigning 67th Avenue west of the section line; (2) provided a more perpendicular crossing of Deadman Wash; (3) avoided the long horizontal curves that characterized Alignment Alternative 2B; and, (4) was acceptable to Phoenix, Peoria, and APS. The factors contributing to the selection of the preferred alignment for Segment 2 are summarized in Table 3-2.

Table 3-2
Segment 2 Summary Table

Alternative	Advantages and Disadvantages
2C – Preferred Alignment Alternative	• **Avoids passing through New River Dam flood impoundment area** • **Avoids passing through BLM land reserved for recreational uses** • **Avoids need to align 67th Avenue west of section line at Deadman Wash** • **Provides better spacing between Segment 4F Interchange and 67th Avenue than 2B**
Alignment Alternative **2A**	• Passes through the large BLM parcel that has been reserved for recreational uses
Alignment Alternative **2B**	• Difficult crossing of Deadman Wash • Creates 67th Avenue intersection too close to the system interchange recommended for Segment 4

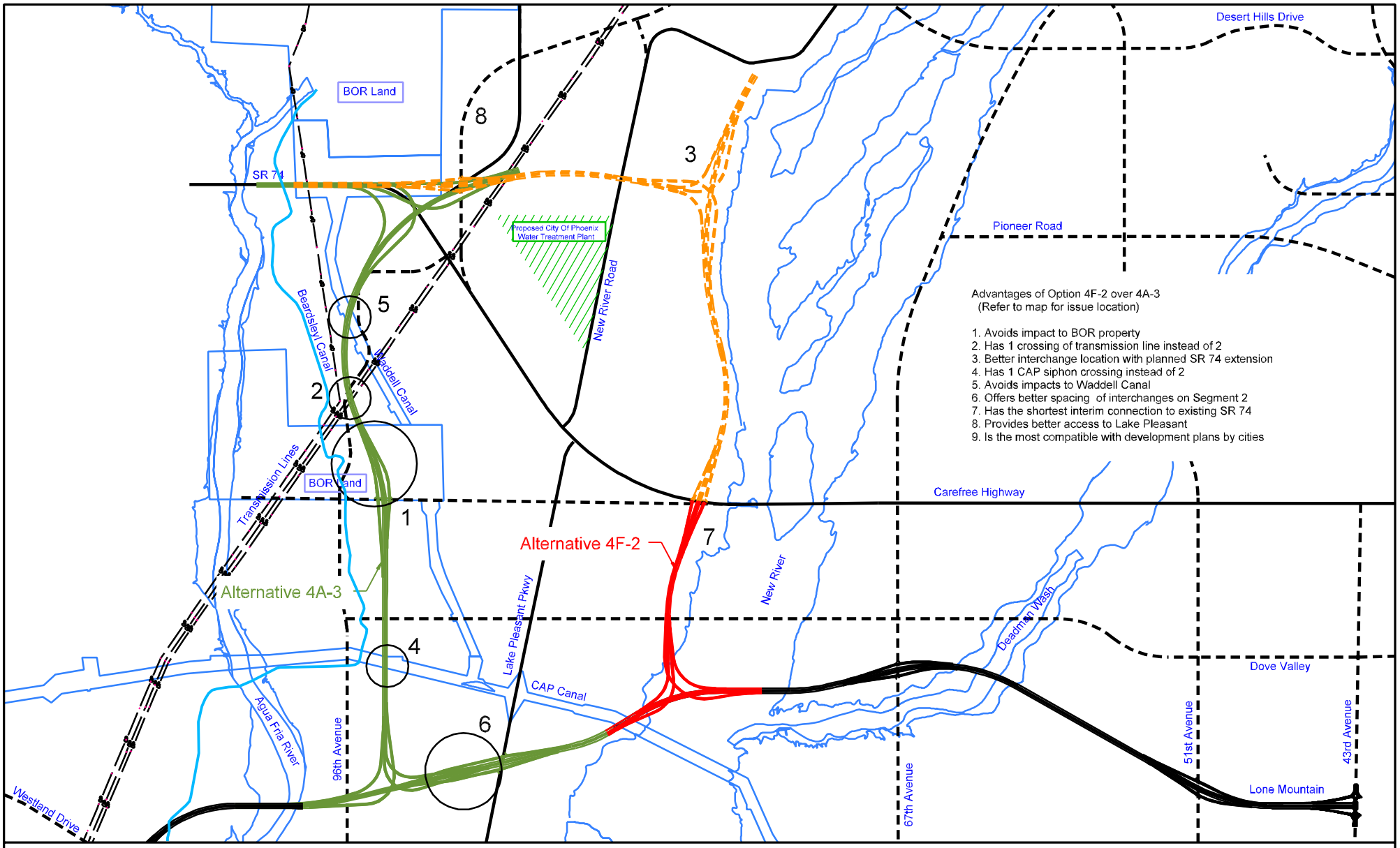
Segment 4 (Alignment Alternatives 4A-3, 4F-2)

Considerable effort went into the identification and evaluation of alignment alternatives for Segment 4, the connection between Segment 2 and SR 74. These alignment alternatives are presented in Figure 3-6. The analyses extended well north of SR 74 to consider implications on the planned future New River Corridor (see Figure 3-2) and to identify and evaluate the full implications of the various alignment alternatives. The alignment alternatives fell generally into two groups—the westernmost alternatives (west of Lake Pleasant Parkway) and the easternmost alternatives (east of the proposed City of Phoenix water treatment plant). The western alternative alignments were generally viewed as being located on land of less value due to poor access and rough terrain. The evaluation indicated that these alignments would be more expensive due to many more issues with canal crossings, utility impacts, and rugged terrain.

The eastern alignment alternatives were on the western edge of the New River floodplain in relatively flat terrain with few utility conflicts. The eastern alignments were favored by the Cities of Peoria and Phoenix because they are more compatible with development plans for the area. After additional analysis, Alignment Alternative 4F-2 was selected to advance to preliminary design and environmental analysis over Alternative 4A-3 because it (1) avoided impacts to BOR property and Waddell Canal; (2) required only one crossing of the APS transmission line; (3) provided a favorable location for the SR 74 extension (if New River Corridor is constructed at a future date) and better spacing of interchanges for Segment 2; (4) provided better access to Lake Pleasant; and (5) was the most compatible with development plans by surrounding cities. The factors contributing to the selection of the preferred alignment alternative for Segment 4 are summarized in Table 3-3.

Table 3-3
Segment 4 Summary Table

Alternative	Advantages and Disadvantages
4F-2 – Preferred Alignment Alternative	• **Avoids impact to BOR property** • **One crossing of transmission line** • **Interchange location for SR 74 extension is favorable** • **Avoids impact to Waddell Canal** • **Offers better spacing of interchanges for Segment 2** • **Provides better access to Lake Pleasant** • **Is the most compatible with development plans by surrounding cities**
Alignment Alternative **4A-3**	• More potential for cultural resource impacts • Not as favorable visually • Crosses transmission line twice



LEGEND

- Alternative 4A-3
- Alternative 4F-2
- Future Planned Alignment (New River Spur/SR 74 Extension)
- Planned Arterials

N

0 ½ 1

SCALE IN MILES

Segment 4 Final 2 Alignment Alternatives
Estrella Freeway (SR 303L),
Happy Valley Road to 43rd Avenue
Project No. S 303-A-200
Tracs No. 303L MA 003 H5946 01L

Figure 3-6

ADOT

As a result of the SR 303L alignment alternatives analysis, the combination of Alignment Alternatives 1B, 2C, and 4F-2 were selected as the preferred alignments and advanced to preliminary design and environmental analysis (see Figure 3-7).

Letters of support for the preferred alignments have been received from the Cities of Peoria and Phoenix, CAWCD, BOR, ASLD, and MAG. In addition to these agencies, ADOT, MCDOT, FHWA, ASLD, City of Surprise, and APS indicated their support for the preferred alignments at the January 6, 2004 agency stakeholder meeting. The Maricopa County Parks and Recreation Department (MCPR) expressed concerns with Segment 4, due to access to Lake Pleasant Recreation Area. However, after a meeting with MCPR to fully explain the alternative concept, MCPR indicated support for the preferred alignment. No agency indicated opposition to the preferred alignments (see Appendix A for copies of agency correspondence).

3.3 ALTERNATIVES

3.3.1 Alternatives Considered but Eliminated from Further Study

During the corridor evaluation and selection process, eight potential corridor options were studied and input from agencies and the public was collected. Some corridor alternatives were eliminated based on public and agency input, cost, and design considerations. A brief description of the corridor alternatives is provided in Section 3.1, and more detail is provided in the Road System Study (URS 2003a). As described in Section 3.2, several alignment alternatives within each corridor segment of SR 303L were then evaluated and eliminated from further consideration based on design criteria, barriers to be crossed, utilities, floodplains, traffic, cost, and preliminary environmental data (URS 2004c).

3.3.2 No-Build Alternative

Under the No-Build Alternative, existing streets and roadways such as Lake Pleasant Parkway and Carefree Highway would continue to be used. The planned portion of SR 303L would extend from I-10 northward to US 60 and the interim expressway connecting to Happy Valley Parkway would remain. No extension would be provided north of Happy Valley Road (the current northern terminus of the interim expressway). As development occurs, the cities and county would extend new arterials into the area in accordance with current plans. This alternative would not fulfill the purpose and need for the project to address transportation infrastructure capacity needs associated with population projections.

3.4 PROPOSED PROJECT

The proposed project, consisting of Alignment Alternatives 1B, 2C, and 4F-2, is illustrated in Figure 3-7. The project extends from one-half mile south of Happy Valley Parkway near the 115th Avenue section line to near 43rd Avenue at the Lone Mountain Section line for a total distance of 12.6 miles. Segment 4, which is not part of SR 303L, would extend northward to Carefree Highway for a distance of approximately 1.3 miles. Milepost numbers for SR 303L have not been established. The proposed project and some of the important characteristics of each segment are described below.

3.4.1 Proposed Project, Segment 1

Segment 1 of the proposed project lies almost entirely on Arizona State Trust land and traverses relatively flat terrain except at the southern and northern ends of the segment. The alignment crosses the Agua Fria River, Beardsley Canal (twice), and two large washes.

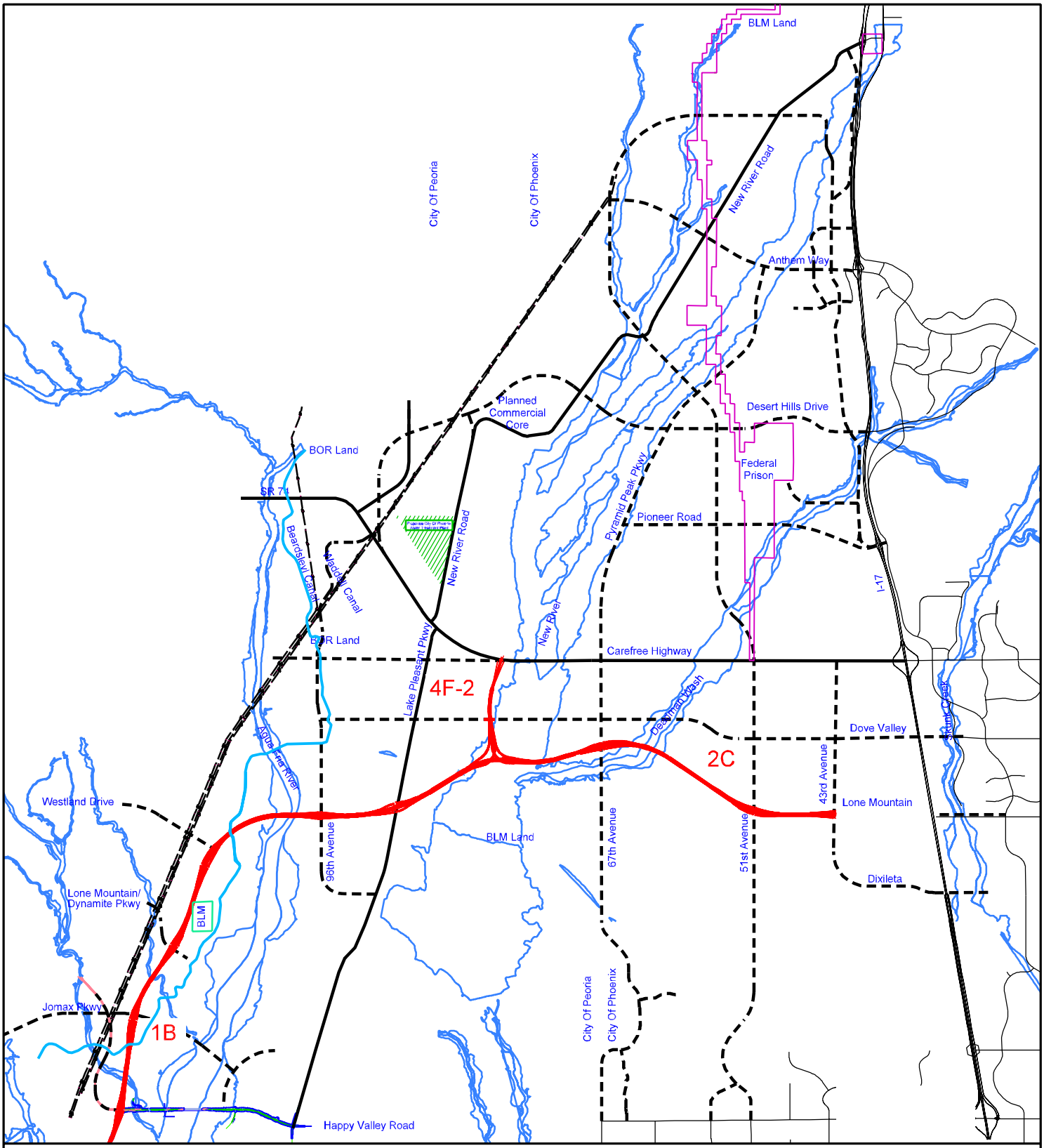
Existing residential properties are located adjacent to the alignment north of Happy Valley Parkway. The alignment would require a small corner of BLM property and some private farmland where the alignment curves eastward to cross the Agua Fria River. The proposed project allows for the construction of future service interchanges at Happy Valley Parkway and three planned arterials: Jomax Parkway, Lone Mountain/Dynamite Parkway, and Westland Drive.

3.4.2 Proposed Project, Segment 2

Segment 2 of the proposed project traverses generally flat to rolling terrain except between the Agua Fria River and Lake Pleasant Parkway. Substantial excavation would be expected in that area, and the freeway would go beneath Lake Pleasant Parkway. The proposed project crosses the CAP Canal siphons, the New River, and Deadman Wash. A 20-inch high-pressure gas line crosses the proposed project west of Lake Pleasant Parkway. Interchanges at Lake Pleasant Parkway and at future 67th, 51st, and 43rd Avenues in Phoenix would be provided. An interchange with the planned 96th Avenue was requested by the City of Peoria and would be included.

3.4.3 Proposed Project, Segment 4

A system interchange to connect SR 303L to SR 74 would be constructed. This interchange would lie partially within the New River 100-year floodplain. A grade separation would be provided for the future Dove Valley Road. Initially, an at-grade intersection would be provided

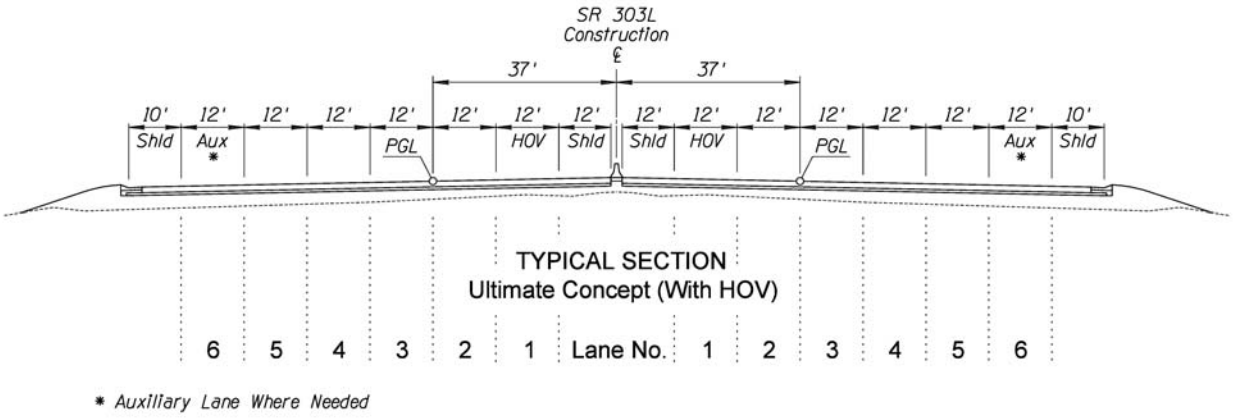

BLM Land
City Of Peoria
City Of Phoenix
New River Road
Anthem Way
Planned Commercial Core
Desert Hills Drive
BOR Land
Federal Prison
SR 74
Pyramid Peak Pkwy
Pioneer Road
Beardsley Canal
Waddell Canal
New River Road
New River
I-17
BOR Land
Carefree Highway
4F-2
Lake Pleasant Pkwy
Dearman Wash
Dove Valley
Agua Fria River
2C
43rd Avenue
Lone Mountain
Westland Drive
BLM Land
96th Avenue
67th Avenue
51st Avenue
Dixileta
Lone Mountain/ Dynamite Pkwy
BLM
Jomax Pkwy
1B
City Of Peoria
City Of Phoenix
Happy Valley Road
LEGEND
Proposed Project
Planned Arterials
N
0
1
2
SCALE IN MILES
Proposed Project, Segments 1, 2 & 4
Estrella Freeway (SR 303L),
Happy Valley Road to 43rd Avenue
Project No. S 303-A-200
Tracs No. 303L MA 003 H5946 01L
Figure 3-7
ADOT

at SR 74. Eventually, a grade-separated interchange would be provided, if the freeway were to be extended north of SR 74 in the future.

3.4.4 SR 303L Roadway

The recommended ultimate typical section is shown in Figure 3-8. The ultimate section would consist of four 12-foot general-purpose lanes and one 12-foot high-occupancy vehicle (HOV) lane plus 10-foot shoulders on the outside and 12-foot shoulders on the median side for each direction of travel. The ultimate paved width would be 82 feet in each direction plus auxiliary lanes where needed. A 42-inch-high concrete barrier would separate the directions of travel and occupy approximately 2 feet. ADOT standard curb and gutter would be placed where needed within the outside shoulder. See plans in Volume 2 of the Design Concept Report (DCR) for details. The total ultimate out-to-out paved width would be 166 feet plus auxiliary lanes where needed. This typical section includes ADOT's recent revision to use 26 feet for the standard median (inside shoulders and barrier).

Figure 3-8
Typical Section – Ultimate SR 303L



As discussed in Chapter 2, SR 303L would be constructed in phases. The initial phase would provide two lanes in each direction. The RTP indicates that a third lane would be added in each direction by 2015. The 2030 forecasts indicate that at least four lanes in each direction may be needed by that date.

3.4.5 SR 303L Interchanges

A system interchange would be constructed at the connection of Segment 2 and Segment 4 near the crossing of the CAP siphons and New River. The interchange would be a three-legged "T" configuration. All system interchange ramps would have two lanes of traffic. The system interchange would consist of three levels.

Eight service interchanges are planned as part of the proposed project. Only two of the arterials currently exist for future interchanges (Happy Valley Parkway and Lake Pleasant Parkway). All the other arterials are planned for future construction by the Cities of Peoria and Phoenix. Additional SR 303L interchanges with Jomax Parkway, Lone Mountain Road/Dynamite Parkway, Westland Drive, 96th Avenue, 67th Avenue, and 51st Avenue are planned.

The type of service interchanges to be provided would be determined during the next phase of design. Three types are used currently in Arizona for most interchanges: standard diamond, single point urban, and dual roundabout. The dual roundabout interchange type is relatively new in Arizona and requires approximately 4 more acres of land than a standard diamond interchange but generally costs less to construct and offers some operational and safety advantages over the other interchange types. A standard diamond or a single point urban interchange can fit within the roundabout right-of-way. The proposed project includes right-of-way for the dual roundabout interchanges.

The portion of the Lake Pleasant Parkway that is north of the proposed project may be realigned slightly to the west, to result in a more perpendicular intersection. This realignment would improve the ramp geometry if either a diamond or single-point urban interchange type is chosen for this location. The realignment would not encroach on the El Paso Natural Gas right-of-way, a major gas line located west of Lake Pleasant Parkway. This realignment of Lake Pleasant Parkway is considered part of the proposed project.

3.4.6 SR 303L Right-of-Way

New right-of-way would be required for the entire project. Although the minimum right-of-way width would be 300 feet, specific right-of-way widths have been estimated based upon a dual roundabout service interchange. The type of service interchange to be constructed would be selected in the next phase of project development. Approximately 862 acres of new right-of-way will be needed for Segments 1, 2, and 4, most of which is State Trust land.

3.4.7 SR 303L Bridge and Other Crossing Structures

The proposed project would require six new bridges, as listed in Table 3-4. At the river crossings, twin bridges would be constructed. The Agua Fria bridges would ultimately have six lanes each. Bridge construction would be designed for the ultimate freeway condition, but bridge construction would be phased (see Section 2.4 – General Project Schedule). The first phase would provide three lanes in each direction, and the second phase would widen the bridges to provide six lanes in each direction. The New River bridges are planned ultimately to have four lanes each since they would be in the middle of the system interchange of Segment 2 and Segment 4.

The proposed project would provide two crossings of the Beardsley Canal. At the first location, south of the planned Jomax Parkway interchange, the south ramps (ramps A and B) would have separate bridge structures from the mainline. At both canal crossings, SR 303L is recommended to be bridged over the canal right-of-way and provide the horizontal and vertical clearance requested by the CAWCD. Bridge piers would be placed within the canal right-of-way at each location. The proposed project would cross the CAP siphons at the New River. SR 303L would be on twin bridge structures over the CAP Canal.

In addition, there are numerous concrete box culvert (CBC) crossings recommended for SR 303L to accommodate storm water flows at Twin Butte Wash, Caterpillar Tank Wash, and at several other minor washes. The majority of these boxes would be constructed full length in the initial phase to accommodate the ultimate roadway section.

The locations of major structures are summarized in Table 3-4. “Overpass” means SR 303L would be elevated over the cross street. “Underpass” means SR 303L would go under the cross street. The determination of which road goes over the other road is based upon terrain, profile of the roadways and, in some cases, whether the street exists prior to construction of the freeway. Table 3-4 reflects the determinations made for the DCR (2004f). Refinement during design and modification of current projected schedules for street construction could result in reversal of the order indicated here.

Table 3-4 Major Structures	
Structure No.	**Structure Location**
1 & 2	Happy Valley Parkway Overpass
3, 4, 5 & 6	Beardsley Canal Overpasses
7 & 8	Jomax Parkway Overpass
9	Dynamite Parkway Overpass
10	Westland Drive Underpass
11 & 12	Beardsley Canal Overpass
13 & 14	SR 303L over Agua Fria
15	96th Avenue Underpass
16	Lake Pleasant Parkway Underpass
17 & 18	SR 303L over CAP Canal
19 & 20	SR 303L over New River
21	Segment 2/4 TI Ramp EN (Traffic interchange ramp for eastbound traffic on Segment 2 to go northward on Segment 4)
22	Segment 2/4 TI Ramp SE (Traffic interchange ramp for southbound traffic on Segment 4 to go eastward on Segment 2)
23	Segment 2/4 TI Ramp WN (Traffic interchange ramp for westbound traffic on Segment 2 to go northward on Segment 4)
24	67th Avenue Underpass
25 & 26	Deadman Wash Bridge
27	51st Avenue Underpass
42	Dove Valley Road Grade Separation
43	Twin Buttes Wash CBC
44	Caterpillar Tank Wash CBC
45	New River Wash CBC
46	New River Wash CBC

3.4.8 SR 303L Trail Accommodation

There are several planned trails that cross SR 303L within the study area. The Cities of Peoria and Phoenix and BOR provided information on trails and their crossing locations. A summary of the trail crossings and how they would be accommodated is shown in Table 3-5. The trails would be multi-use, but are not planned to accommodate equestrians unless noted otherwise in the table. Highway funding for trail accommodations is contingent on the trails being included in plans adopted by appropriate governmental agencies.

Table 3-5 Trail Crossings	
Location	**Accommodation**
Happy Valley Parkway	8-foot sidewalk plus 5-foot unpaved equestrian path under freeway
Twin Buttes Wash	10' x 12' CBC
Caterpillar Tank Wash	10' x 12' CBC
Lone Mountain/Dynamite Parkway	6-foot sidewalk and 6-foot bicycle/shoulder under freeway overpass
Agua Fria River	Under the Agua Fria Bridge (equestrians)
Lake Pleasant Parkway	6-foot sidewalk and 6-foot bicycle/shoulder on bridge over freeway
CAP Siphon	Under CAP Siphon Bridge (equestrians)
New River	Under New River Bridge
67th Avenue	6-foot sidewalk and 6-foot bicycle/shoulder on bridge over freeway
Deadman Wash	Under Deadman Wash Bridge
51st Avenue	6-foot sidewalk and 6-foot bicycle/shoulder on bridge over freeway

3.4.9 SR 303L Utilities

The proposed project traverses mostly undeveloped property; therefore, few utilities would require relocation. There is a major natural gas line that crosses the proposed project west of Lake Pleasant Parkway. In this area, SR 303L would be 28 feet below the pipeline. The pipeline would be relocated to cross beneath SR 303L, as recommended by El Paso Natural Gas Company.

APS plans a new major transmission line that would cross Segment 4 north of Dove Valley Road and cross SR 303L between 43rd Avenue and I-17. Continued coordination with APS would occur to ensure that proper vertical clearance is provided over the proposed project and that transmission towers are placed outside of the proposed right-of-way.